

Comparing Apples and Oranges: A Mac Primer for PC Users

By Sean McMains, ACS General Access Lab Monitor (mcmains@cc1.unt.edu)

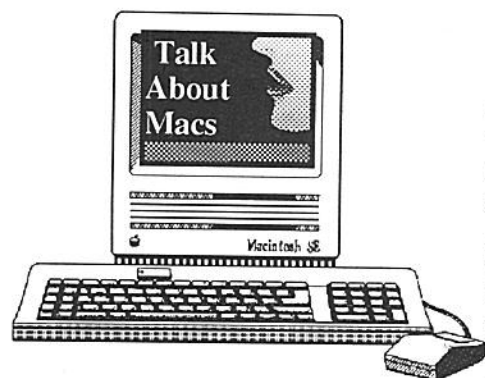
As the Macintosh becomes more popular in the business world, many of us who have had no experience with the machine up to now will be coming in contact with it and having to use it. Though the Macintosh is billed as "The computer for the rest of us," that does not mean that one can learn to use it (much less use it well) instantaneously. Having the computing paradigm of the PC upon which to build will make the learning process easier, but there are several substantive differences between the machines, and it will, therefore, be a learning process indeed.

The Mac Environment

The first thing one notices upon looking at a Macintosh is that the things on screen are ordered differently than they are on a PC. Every single bit of information the computer presents to the user is contained in a "Window," an approach very different from the command-line interface to which MS-DOS users are accustomed, though

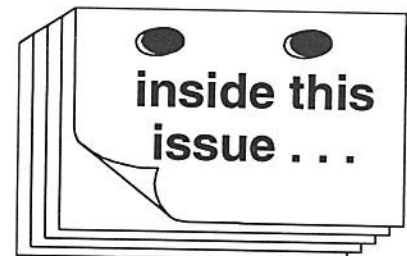
those who use Microsoft's "Windows" will have an easy time adjusting. Generally, one can switch freely between the different windows on the screen simply by using the mouse to click in the window to be used, which allows one to work on more than one thing at a time with relative ease.

At the top of the screen is a "Menu Bar," which has a whole slew of "Pull-down-menus" on it. One of these looks like a little Apple, and the rest are generally words such as "File," "Edit," and others. The menus differ from those in



Windows in that they always stay at the top of the screen in the menu bar, rather than residing in various windows around the screen. The commands available in the menus, as well as the menus themselves, will change from program to program to allow access to appropriate commands. The Apple menu, however, will always be present and will always contain pretty much the same things. Under System 6.0.x (an older version of the system software) it will contain "Desk Accessories," small programs that can be called up at all times, under System 7.0 (the latest and greatest), it will contain whatever the machine has been configured to display there.

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HOURS FOR UNIVERSITY OF NORTH TEXAS COMPUTER ACCESS AREAS : Fall 1992

Day of Week	Willis	BA	ISB 110	Chilton, Matthews, Music	GAB	Terrill, Wooten	ISB 205C	Lab Locations
Monday - Thursday	Open 24 hrs.	8 a.m. - 11:45 p.m.	7:30 a.m. - Midnight	8 a.m. - 10 p.m.	8 a.m. - Midnight	8 a.m. - 8 p.m.	Noon - 10 p.m.	☉ BA: 330, 332 ☉ Chilton : 255, 116 [Adaptive Lab] ☉ GAB: 330, 550 ☉ ISB: 110, 205C — grad. students only ☉ Matthews: 309 ☉ Music: 1007 ☉ Terril: 247 ☉ Willis: 134 ☉ Wooten: 120
Friday	Open 24 hrs.	8 a.m. - 8 p.m.	7:30 a.m. - 9 p.m.	8 a.m. - 5 p.m.	8 a.m. - 5 p.m.	8 a.m. - 5 p.m.	1 p.m. - 5 p.m.	
Saturday	Open 24 hrs.	8 a.m. - 8 p.m.	9 a.m. - 9 p.m.	10 a.m. - 5 p.m.	2-8 p.m.	Closed	10 a.m. - 5 p.m.	
Sunday	Open 24 hrs.	Noon - 11:45 p.m.	1 p.m. - Midnight	1 - 10 p.m.	2 p.m. - Midnight	2-8 p.m.	1 - 10 p.m.	

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PRIMER continued from page 1.

The first program most people see on a Macintosh is called the "Finder." This program serves the same purpose as the DOS shell in MS-DOS or the File Manager in Windows: it allows the user to manipulate files in various ways. In the Macintosh world, one has structures analogous to the PC's directories, but they are called folders. In the finder, the contents of each folder will be displayed in a window of its own. If there is a folder within that folder, it will be visually represented by a small picture, or icon, of a file folder. Other types of files, such as programs (which are called "Applications" in the snappy nomenclature of the Mac) and data files will have their own distinctive icons.

The Macintosh stores information differently than does the PC, as well. One cannot use 5.25" disks with the Macintosh, and the 3.5" disks, though physically identical to those of the PC, are formatted differently, which doesn't allow the machines to share disks. One can format a given disk on a Mac or PC, but once formatted, it cannot be used with the other machine. Additionally, while PCs generally refer to disks by their physical location (drive A: etc.), Macintosh always uses the volume name to identify it, and if using more than one disk at once, the operating system detects when information from a particular disk is needed and will ask the user to insert it at the appropriate moment.

Program Portability

Since the PC and the Mac are very different machines internally, software that is written for one cannot be run directly on the other, though there are several emulators out for the Macintosh that will allow it to run PC software (see "MICRO-TIPS" on page 17 of this issue for more information on this topic). Since the guts of the Macintosh are secrets carefully guarded by

Apple, there are no emulators to run Mac software on a PC at this point. This makes it somewhat tricky to transfer information between the two platforms. In the best-case scenario, a software manufacturer will create versions of software for each machine that are virtually identical, and which can read the same files. Pagemaker, the popular page-layout software, is such a program. It is similar enough from platform to platform that one can use it on a machine with which one is not familiar without any difficulty, and all versions can read the same files. For example, one can create a document on an IBM PC and give the file to a Mac user, who can call it up on his machine without any difficulty.

More frequently, software manufacturers will produce products which can import files made with another computer. This will allow one to use files from another machine, though the process is somewhat more laborious, as one has to go through a conversion process, rather than opening the file normally. WordPerfect is one such program.

Finally, there are some programs that only exist on one platform. In these cases, one must resort to one of the cross platform data standards, the most

common of which is ASCII (American Standard Code for Information Interchange) text. The advantage of ASCII formatted files is that any machine can read them with a minimum of difficulty. The disadvantage is that any special formatting, such as font or size changes, columns, or inline graphics will be lost. ASCII text is generally used for word processing files, though there are standards for other types of data (such as spreadsheets and databases), some of which use ASCII text as well. MacWrite is an example of a program that exists only on a particular platform.

Learning to Use a Mac

If you already know how to use a PC and would like to learn how the Macintosh works, you would probably be best served to sit down with one of the excellent "Introduction to Macintosh" programs that one can find here and there, or if you're a more adventurous type, simply go to one of the local computer labs and sit down at a Mac and experiment until you get the hang of what's going on. No matter how you learn, the Macintosh is an impressive machine, and you will not regret the time you spend learning it. ■

So, You Want to Buy a Mac . . .

By Sean McMains, ACS General Access Lab Monitor (mcmains@cc1.unt.edu)

The Macintosh product line, as any avid user of the machines will be the first to tell you, is stupidly complicated. The machines range from small versions ideal for use as a light networked word processing station to full-blown multimedia machines with enormous amounts of on-board memory and photorealistic graphics. Naturally enough, as the capabilities of the machine increase, so does the price. When deciding to buy a Macintosh then, it is important to consider two things:

- ❶ What do you need the machine to be able to do, both now and in the future?
- ❷ What kind of money can you spare for this machine?

Once these questions are answered to your satisfaction, you can actually begin the process of shopping for your dream machine.

Continued on next page.

The Macintosh Product Line

The Macintosh product line is divided into three broad categories according to the actual physical construction of the machine: the compact, the modular, and the portable. The original Macintosh was a compact Mac. This is the most distinctive of the computers and the shape that is still most commonly associated with the machines. These look rather like toasters with a small video screen on top, only colored beige or platinum (Apple's trade name for "off white") instead of the more standard toaster chrome. The modular Macs don't differ significantly in appearance from the most common design for IBM PCs: that of a large, rectangular box with lights and disk drives on the front and Input/Output ports on the back. Finally, there are the portable Macs, which come in a variety of flavors and are probably best characterized by the fact that they are able to run on battery power.

The Mac Compacts

Let's start with a survey of the compact Macintosh models. The very first of these was the original Macintosh. It had 128K of memory and one disk drive. It's a relic. If you're ever offered one, don't buy it unless you need a paper-weight or are the curator for a museum that specializes in computers. The same goes for the "Fat Mac," which was the sequel to the original Macintosh and which had 512K of memory. The first Macintosh made that would still be of any use today is the Mac Plus, which had a full megabyte of memory (expandable to four), the option to add another floppy disk drive, and a SCSI port, which allows for the connection of all kinds of peripherals, such as hard drives, scanners, CD-ROM drives, etc. The next evolutionary step in this line was the Macintosh SE, which had a faster processor than the Mac Plus and thus garnered much favor from the im-

The machine to follow the SE was called the SE/30. This was the first compact Mac to use a microprocessor different than the 68000 that the original Mac 128K used. The SE/30 included the 68030 microprocessor, which included all the capabilities of the 68000 plus more speed, a Paged Memory Management Unit, and a built-in math coprocessor for arithmetic intensive applications. The speed was welcomed by all, and the PMMU allowed the use of Virtual Memory, the ability to make the computer think that space on the hard disk was simply an extension of onboard RAM, for the first time on the Macintosh. The new processor also allowed the Mac to use more physical RAM than before possible. The standard Apple nomenclature would have dictated the addition of an X to the end of the current model's name when an '030 processor was added, but this standard was avoided in this case for obvious reasons.

The only two compact Macs that remain to be explained are the Classic and the Classic II. The Classic, as you might expect, is just a slightly souped up Mac SE, and the Classic II a cheaper to manufacture SE/30 without an expansion slot. These machines were part of Apple's successful strategy to increase market share by lowering the previously exorbitant prices on their machines to something that mere mortals and even the occasional college student could afford. The Performa 200 is an extension of this idea simply a Classic II repackaged to be sold through retail chains at lower costs.

The Modular Macs

The next type of Macintosh to be introduced was the modular Mac. These machines differed from the compact Macs in that they didn't have a built-in monitor and they offered more expandability. The first of these to appear on the scene was the Mac II, which used a 68020 microprocessor, a math coprocessor, and had six NuBus slots, into

which one could plug cards to drive screens, network connections, or accelerators. The Mac II was also the first in the line to support color, though it could only do so with the addition of a color video card and a color monitor. It was quickly followed by the Mac IIfx, which was identical to the Mac II except for the fact that it used a 68030 processor rather than the older '020 and had the benefits of that processor outlined above.

The next design decision was brought about by the fact that the modular Macs were, in a word, huge. Realizing that few people actually made use of all the NuBus slots in the modular machines, Apple produced the Mac IIfx, which is the equivalent of the Mac IIfx, only with half the NuBus slots. This not only made the machines more compact, but cut the cost as less in the way of materials were needed. The Mac IIfx and the Mac IIsi were next on the scene. These machines didn't represent any major advances in the product line, but were only evolutionary steps to continue to improve the performance of the computers.

The next milestone in the modular line was the Macintosh IIfx. This was Apple's experiment with souping up the '030 based machines as far as they would go. With this unit, Apple introduced the use of additional microprocessors in the machine to handle mundane tasks such as driving the serial ports and taking care of the floppy disk drives. This allowed the 68030 that runs the show to devote its time to other tasks, thus increasing the performance of the machine. Realizing that the \$5,000 price tag on the IIfx wouldn't appeal to very many people, Apple introduced the LC shortly thereafter, which was quickly replaced by the LC II. These machines, about the size and shape of a Domino's pizza box, were the smallest and cheapest of the modular line. The LC was basically a slow Mac II without the expansion slots, and the LC II a similarly handicapped version of the IIfx. The LC II has sub-

sequently been repackaged as the Performa 400 for sale through retail stores.

The Performa 600 recently made its debut in the modular line as well. It is similar to a Mac IIci, but less expensive and has the option to include a CD-ROM player as a factory option which will not only read CD-ROM media, but also audio CDs and Kodak's new Photo-CD. This will allow the computer to display photos that have been developed onto a CD rather than onto film, and even import those photos into programs as graphics files.

The modular line's top end was filled out with the Macintosh Quadras, of which there are three. The Quadra 700 is a high-powered machine about the same size as the compact modular Macs, but driven by a 68040 processor, which is about three times as fast as the 68030. The Quadra 900 was quickly replaced by the Quadra 950, which is a faster version. Both machines come in a tower configuration and have plenty of room for expansion. They are both powerhouse machines, but come with a high price tag to match the performance. These machines are your best bet if you're going to be doing intensive multimedia work, but are overkill for almost anything else.

Portable Macs

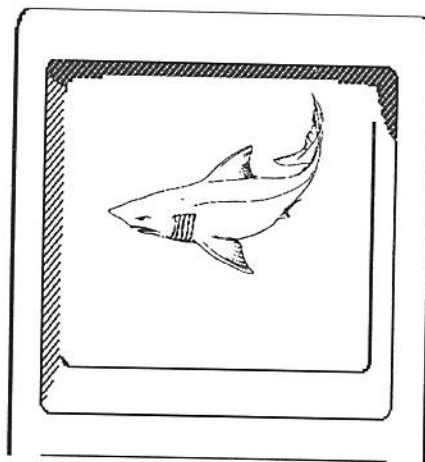
In the realm of portable computers, Apple has had five entries thus far: the Macintosh Portable, and four PowerBooks. The Macintosh Portable was misnamed — it weighed 21 pounds and was not considered truly portable by even the most stalwart of Mac users. It was originally shipped without a backlighting option, though Apple quietly rectified that oversight a few months after its initial release. Some time after the release of the portable, some bright executive at Apple noticed that the portable computer market was burgeoning, and yet Apple wasn't getting a share of that market with its monolithic entry.

Please see BUY on page 6.

Stupid Mac Tricks

By Sean McMains, ACS General Access Lab Monitor (mcmains@cc1.unt.edu)

When I was conscripted to write this article, the conscriptor told me "Write an article about your favorite things to do with a Macintosh." I gave that some thought, and couldn't really decide what sort of things are my favorite. I use it to balance my checkbook and maintain an electronic Rolodex but that's pretty prosaic. I use it to exchange E-Mail with people in Texas, New Jersey, Georgia, Kentucky, and Australia, but again, that's not all that out of the ordinary. After much contemplation, I decided not to share my favorite Mac things after all (and I hope I still have a job!), but instead share some of the more offbeat things for which one can use a Mac.



Mac Stereo

One unusual use to which you can put that extra Macintosh you have lying about the house (you do have one, don't you?) is that of a stereo. Any model can run a program called "Sound Tracker," written by a chap from Germany, and the later models even provide stereo sound. This program plays MOD files, which originated on the Amiga computer but can be transferred to any platform that has a player program. The program uses short sound samples played back at different pitches to produce surprisingly good quality music. Since the Mac has, from its inception, had the capability to playback four-voice sound, it adeptly handles the reconstruction of these unique music files. The program can be run in the background as well, so you can go to the library with your headphones and type your paper at the same time the computer is pumping music into your ears. Sound Tracker, as well as the MOD files it plays, can be obtained from local BBS systems, or via anonymous FTP from "lth.se".

Multimedia Comics

Another unusual use for the machine is to play what I call "Multimedia Comic Books." Basically, these are graphic stories presented on the computer screen with the addition of sounds and user interaction. One of the better known of these is called "Spaceship Warlock," which is a full-color animated interactive adventure game. As you can imagine, this sort of application requires a lot of memory; Spaceship Warlock is delivered on a CD-ROM. Some simpler examples of this genre include the Inigo series, which chronicles the adventures of a cat, and The Twilight Staque, which concerns a punk band that has had a guitar stolen. Spaceship Warlock and the Inigo stories are commercial, while the Twilight Staque is freeware.

Photo-CD Player

A new use for the Macintosh is as a Kodak Photo-CD player. This is a budding technology that will allow one to take the film from one's vacation (or whatever) to

a photo processing center and have them put the images onto an optical disk, similar to the CDs we use in our stereos. Then one can take this disk and put it into a Photo-CD player and view the images stored thereon. Normally, a separate Photo-CD player would be required, but if one has a Mac properly equipped with a CD-ROM reader, not only will it be possible to use the Mac as the player, but the images can also be read into the machine and used just like a scanned image! This capability will be added with the new CD-ROM software from Apple.

Your Own Handbell Choir!

Have you ever wanted to have a handbell choir of your own? Well, there's a program called "Bell Choir" for the Macintosh that will fulfill that desire! It allows several networked Macs to split up the notes of a melody and each play to notes it has been assigned, and it will even play chords by having each machine play one note of a chord. This program is available via anonymous FTP from ftp.uu.net.

Mac Tank

Finally, if you have an old Mac Plus sitting around for which you have absolutely no use, you can do one of two things with it:

- 1 Give it to me. I have several friends who would love to get their hands on it.
- 2 Make a fish tank out of it.

One of the editors of *MacUser* magazine has constructed and published complete plans to turn a Mac Plus into a fully functioning, aesthetically pleasing fish tank. All your friends will be saying "That's such a great After Dark module! Where'd you get it?" ■

BUY continued from page 5.

So, Apple released the PowerBook series, the first truly portable Macintoshes, all of which weighed in at under seven pounds.

The PowerBook 100 is basically a shrunken version of the portable. It uses the older 68000 processor, is rather slow, is more flimsily constructed than the other PowerBooks, and offers none of the advantages of the '030 processor. On the other hand, it is the only of the PowerBooks that can plug into the SCSI port of another Mac and allow that computer to access its hard drive transparently. Unless one is on a very strict budget and absolutely needs a portable machine, the 100 is to be avoided.

The 140 was quickly discontinued in favor of the faster 145. Both machines use the same display as the 100, but are more ruggedly constructed than the 100 is (I'll be happy to vouch for this, as mine had a bottle fall 12 feet onto the keyboard and still works), and employ the 68030 processor. They are also slightly larger than the 100, and have an internal floppy drive, rather than the external drive the 100 sports. The high end in the portable line is the 170, which boasts an active matrix display, which results in higher contrast than the passive matrix on the other machines as well as a wider range of angles from which the screen can be viewed. The 145 and 170 run at the same speed, so the 170's main advantage is its improved display technology. On the downside, the active matrix displays are more subject to damage and have been shipped with dysfunctional pixels, much to Apple's discredit.

Which is Best?

Different machines in the Macintosh line are well suited for different applications because of their idiosyncrasies. The modular Macs are useful for word processing and telecommunications, as these applications don't require too much processor power and the machines themselves are pretty cheap. If one is going to be doing serious desktop publishing work, one should definitely invest in a machine that has an expansion slot so that a large monitor can be added, such as the SE/30 or one of the modular Macs. If music is your love, don't buy a PowerBook at the moment, as they are subject to problems with MIDI data.

If you're making a buying decision, there are some excellent sources of information on the machines: *MacUser* and *MacWorld* are the two major monthly Macintosh magazines, and they contain a wealth of useful information. *MacWeek* is an excellent publication for finding out what plans Apple has for new machines, though it's rather hard to come by. America Online is one of the best on-line services for Macintosh users and has many, many knowledgeable people sharing information on their good and bad experiences with various machines. Do plenty of reading, plenty of talking with people who use the machines for the same things you do, and try to get your hands on the machine you would like to purchase for a while before you do so. With that information in mind, it should be an easy matter to get the Mac that will best meet your needs. ■

The Macintosh of the Future

Four Articles Examine New Offerings

System 7.1 — Faster, Smaller, Better

By Mark Thacker, CCI LAN Manager (thacker@ccl.unt.edu)

Apple Computer introduced the System 7.1 Operating System for the Macintosh personal computers on October 19, 1992. This upgrade to the system software features multi-language support, drop-in CPU updates and even easier use of fonts. This release corresponds to the release of the new Mac IIvx, IIvi, Performa 600, PowerBooks and PowerBook Duos.

International Support

System 7.1 includes WorldScript, Apple's international language support. Macintosh software written to the WorldScript standard will be able to take advantage of two-byte languages such as Japanese without having to have inherent support for such a language. Users will simply drop a language definition file into the System folder to add a whole new alphabet to their Mac. Other features, including the ability to mix languages within a document, are described in the article "WorldScript Brings Multilingual Support" on page 8.

Even Easier Fonts

When System 7.0 was released, users marveled at the ease of adding fonts: simply drag a font to the System folder and it was available! TrueType fonts also allowed application-independent scalable fonts that looked as good on the screen as they did on paper. However, users wanting PostScript fonts to appear on their screen needed Adobe Type Manager. System 7.1 takes ease-of-use with fonts one step further with the addition of a Fonts folder in the System folder.

To add a font under System 7.1, you simply drop it in the Fonts folder. Adobe PostScript Type 1 and TrueType fonts (also used in MS-Windows 3.1) are both supported. The standard screen-oriented bit-mapped fonts are also available.

CPU Upgrade Path

As Apple has introduced new Macintoshes, they also have introduced new versions of the Apple Operating System to take advantage of the new machines. System 7.1 will change this however and new machines will ship with CPU upgrade modules that change or disable parts of the operating system that are not compatible with it. In the MS-DOS world, this would be the equivalent of a 486 or higher machine shipping with a patch that would allow DOS to take advantage of extra features of these processors. Users should take note that this will mean fewer updates of system software and an easier path for Apple to introduce new machines.

Tune-ups and Bug Fixes

Apple has released a "patch" for System 7.0 & 7.0.1 called TuneUp 7.1.1. This patch fixed a few memory problems, decreased the time for some disk/file copy operations and improved printing under certain conditions. These fixes have been incorporated

into System 7.1. There have been some improvements in other areas as well.

Some beta users report that System 7.1 is faster at screen drawing and file copying, and is more stable on Quadras and PowerBook computers. It is also 300 Kbytes smaller when loaded than System 7.0.1 with TuneUp 1.1.1 installed. Users of the current System 7.0 or 7.0.1 (used with PowerBooks and Quadras) can download TuneUp 1.1.1 from Apple's anonymous FTP site, <ftp.apple.com> or by contacting their local dealer.

Should You Upgrade?

Some people consider the inclusion of WorldScript justification for upgrading alone. Add to this the *decrease* in memory size needed and the *increase* in performance plus even easier use of fonts (PostScript, TrueType and bit-mapped), and it looks like upgrading to System 7.1 is definitely in order. If you are using System 6.0.x, it is past time to upgrade; you can longer justify saying that you don't want to upgrade to the first release of an operating system. However, there is one small catch.

System 7.1 probably will not be licensed for free distribution via user groups and on-line services. This means that you can not download the system software from <ftp.apple.com> or your favorite BBS. System 7.0 and 7.0.1 have been free for users to download and to these users, System 7.1 may come as a bit of a surprise. Apple may release a minimal" System 7.1 upgrade kit containing system software, the QuickTime extension (see *Benchmarks*, October 1992) and some manuals for under \$50, but these plans are not firm. Whatever the price, System 7.1 is still a bargain in many ways!

Source

MacWeek (09-14-92, Volume 6, 32, Pg. 147). ■

WorldScript Brings Multilingual Support

By Mark Thacker, CC1 LAN Manager (thacker@cc1.unt.edu)

WorldScript is a new system software extension provided by Apple Computer for use in System software 7.1 (see the article on page 7, "System 7.1 - Faster Smaller Better"). This extension promises to bring the first truly unique multilingual operating system to the Mac.

Current Multilingual Problems

If you work on the Mac today, you have over 30 choices for which language you wish your Mac to speak. However, you have a problem if you work on the Japanese version of the Mac operating system and need to write a document in English, as the other language is foreign to the Mac. Add to this the problem that Apple cannot possibly update all 30 versions of the system software at once and you have version incompatibilities.

Some languages, such as Arabic, have context sensitive characters that change their meaning within a sentence. Some languages are read right to left and even others are formed from non-latin character sets such as Japanese or Hebrew. Needless to say, writing software that is aware of all of the languages in the world is a daunting task at best.

Many software vendors and publishers are stuck with one publishing or writing package that speaks the native tongue they want to publish in. Apple's WorldScript promises to break this dependency on one package by allowing developers of any program to support virtually any language on the Mac.

What WorldScript Provides

WorldScript provides a set of procedures within the Mac operating system to change the very basic way that characters are written on the screen and generated. These include the following changes:

- ☐ **Character Set Freedom:** The character set is no longer limited to those 256 characters generated from 8-bit ASCII code. This also allows the Mac to easily take advantage of Unicode, the emerging international standard for defining two byte languages and the replacement for ASCII.
- ☐ **Input Method Independence:** Obviously there are some languages which have no direct relationship to English character sets. There is now built-in support for non-keyboard-based data entry that is independent of the current application being used. That is, a developer does not write code to watch for certain keyboard strokes, but just accepts input from whatever the current device is.
- ☐ **Dictionary Manager:** Allows multiple applications to share custom or common dictionaries that describe the language currently used and definitions in that language. One would think this would mean common spelling dictionaries in future word processing packages.

- ❑ **Language Mixing:** Since WorldScript will also allow users to mix several different languages on one line of text, you could mix languages which read right to left, left to right and vertically (in theory at least!) together on the same line. This is somewhat like having multiple fonts on the same line, but takes this the next logical step to languages.

Languages and Software

Language modules may not be ready immediately after System 7.1 ships, but when they are, we could expect to see a number of our favorite applications come out in multiple language formats. Will we see different versions of each software package for each language the company wishes to support? Probably so, because WorldScript does not do *translation* between languages. Authors will still need to write dialog boxes and menus in proper syntax for the language. However, they need only ship it with a language module that could be used by any other application on the end user's machine.

WorldScript is definitely a change for the better. Its inclusion into the operating system positions the Mac for a quicker acceptance into the international marketplace. It also indicates Apple's acceptance of non-English users as a large source of revenues. Now if we could only see a multilingual form of DOS or Windows...nah, that would make too much sense!

Reference

MacWeek (09-14-92, Volume 6, 32, Pg. 147).

MacWeek (09-28-92, Volume 6, 34, Pg 38). ■

QuickDraw GX — The Mac Goes Objective

By Mark Thacker, CCI LAN Manager (thacker@cc1.unt.edu)

Among the future Mac system extensions that have been talked about are the two discussed in this issue of *Benchmarks*, QuickDraw GX and Open Collaborative Environment (OCE). Though a firm shipping date has not been set on either product, we can probably expect to see them late first or second quarter 1993.

QuickDraw GX is an extension to the current Mac graphics engine, QuickDraw, to support object-oriented graphics. It will allow the Mac to do with graphics and TrueType fonts on the screen what they have been able to with PostScript fonts and printers on paper. Is QuickDraw GX the same as Display PostScript as found on the NeXT computers? No, but then it doesn't force you down that path of only using PostScript-based applications on the Mac.

Beyond Bitmaps

QuickDraw is itself the basic set of drawing instructions used by all Mac applications to generate screen output. They are also used on non-PostScript printers such as the Apple StyleWriter, ImageWriter and Personal LaserWriter SC. QuickDraw is bit-mapped based which means that letters and graphics are described in terms of the actual dots they occupy on the screen, not by their general shape or features (ligatures, serifs or italics). You had to deal with jagged printouts of graphics and fonts.

Because printers and monitors have different resolutions, you were forced to have multiple sizes of a particular font installed so that the printed copy would look as good as the screen copy of a document. When Apple introduced TrueType and Adobe provided TypeManager, things changed. You could display and print scalable fonts (TrueType and PostScript respectively) and have things turn out fairly predictably for your fonts. However, there were still those bit-mapped graphics to worry about — they were defined at screen resolution, not printer resolution.

QuickDraw GX takes the object-oriented approach. Screen bit maps and fonts are now objects. One of the properties that this allows is for the user to define a bit-mapped image at a higher resolution than what their screen provides. It also means that the operating system provides definitions for lines, quadratic curves, rectangles, polygons, text, bit maps, paths and pictures. You need no longer rely on application software to do this for you.

Text Special Effects

QuickDraw GX includes some very interesting special effects for text objects. A new line-layout manager will allow you to define text along a path. That is, if you wish to write "The world is not flat" and have this flow around a picture of the Earth, you could. You would be able to use this rounded text in any application, not just in the application that created it.

Other text effects include the ability to produce fonts that are composed of more than one character (ligatures), context-sensitive fonts (Arabic) and character sets written vertically. Note that these effects work in tandem with WorldScript to provide the international community with an easier to use operating system (see "WorldScript Brings Multilingual Support" on page 8). Fonts providing these effects will be known as TrueType GX fonts.

Printing Changes

QuickDraw GX will also provide a new Open Printing Architecture. This new printing technology will make printer driver development easier and more consistent between Apple and third-party developers. Its inclusion was originally promised for System 7.0, but got delayed.

You will also see the addition of printers as objects on the desktop. You will finally be able to drag-and-drop print. Users of Windows 3.1 and OS/2 should recognize this feature. The Mac version will take it one step further and allow for a common print spooler format. This means that you can "print" your document to a file, give it to someone else and have them print it on a totally different printer without having to have the original document or the set of fonts that you used to create it.

Support for multiple paper trays and page formats within a document are also added. Users of non-AppleTalk printers, such as the StyleWriter, should note that they too will be able to share their printers on networks under this new printing architecture. More and more, System 7 file sharing is becoming a mininetwork.

One Common Engine

The inclusion of this technology does not make the Mac more proprietary to Apple, but in fact opens up a common standard for developers and users. Developers can now spend their time working on their product rather than worrying about printing versus screen presentation. Because QuickDraw GX provides PostScript-like functionality and includes the new print architecture, a developer doesn't have to reinvent the wheel. They need only support Quick-

Draw GX objects and the printing and displaying of pictures and text is taken care of for them.

You can stop worrying about whether something will look as good on paper as it does on screen, QuickDraw GX will take care of it for you. This also frees you from needing specialty software to create effects with your text.

Reference

MacWeek (09-28-92, Volume 6, 32, Pg. 40). ■

ColorSync Provides WYSIWYG Color

By Mark Thacker, CC1 LAN Manager (thacker@cc1.unt.edu)

Apple Computer is currently beta testing a new system-level color-matching system known as ColorSync which will eliminate surprises for color desktop publishers. ColorSync provides a way for color input and output devices to speak a common language and translate color from one language to another. We can expect to see this product early to mid next year.

When Red is not Red

Currently, a color that you see on your Macintosh monitor is not necessarily the same as the color that you will get when you print. This is because color input and output devices speak generally in two different tongues, Red, Green, Blue (RGB) or Cyan, Magenta, Yellow, Black (CMYK). A particular color, red for instance, is represented differently in each world. On a RGB monitor, the shade of red is determined by how intensely the red gun fires on the screen. On a CMYK printer, the shade of red is determined by the mix of colors produced by the ribbon or ink. Needless to say, both devices cannot produce the exact same shade of red.

The range of color produced by a device is known as its gamut. ColorSync promises to do away with the above problem by making sure that all devices speak the same language and by ensuring that the output and input devices use the same gamut. In this way, you won't see on your screen what you can't print.

Parts

The ColorSync extension will consist of a Color Matching Utility (CMU) and a Color Matching Method (CMM). The CMU will handle the problem of making sure every input and output device speaks the same language. All RGB and CMYK devices will speak the CIE XYZ device-independent language. In this way, a color scanner does not need to understand its final destination printer in order to get a good color match.

The CMM handles the problem of gamuts. If you produce a color on your screen that is unprintable or is outside of the gamut range of your printer, the CMM will substitute the correct color for you. Chances are that this matching will be done at your request rather than automatically because of the overhead involved. The CMM is also modular. Users requiring exact matches between monitor and output device will be able to replace the standard CMM module with one provided by a third party developer. This way, the high-precision, processor-intensive color matching needed by professional presses won't be shoved onto you with a simple four color ImageWriter.

The modularity of ColorSync is provided by profiles for each piece of hardware. When you purchase a color scanner or printer, it will most likely come with a ColorSync profile that you simply add to your system folder. From that point on, the system knows about the color capabilities of your device. However, we can expect some small lag time between when ColorSync is released and when we see more color profiles. It is worth noting that EFI Systems has already released color profiles for their proprietary color-matching system, EfiColor, which they promise to upgrade to ColorSync when it is shipped.

Again, Apple is providing end users with more tools to make the Mac even more of a WYSIWYG machine. ColorSync is designed to take the surprise out of color printing and make the Mac an even more open system.

Reference

MacWeek (09-28-92, Volume 6, 32, Pg. 42). ■

Internet (TCP/IP) Software for the Macintosh

By Billy Barron, VAX/UNIX Systems Manager (billy@unt.edu)

In many ways, the Macintosh is a superior platform to access the Internet compared to the PC. The Macintosh TCP/IP software is more diverse and usually easier to use than the PC's. The major reasons include the Mac's GUI and the ease of programming TCP/IP applications for the Macintosh. In this overview, we cover the packages supported by the UNT Computing Center as well as some packages we do not support that the advanced Mac user might find useful.

MacTCP

MacTCP is the interface between the network hardware and the Macintosh application programs. MacTCP shows up in the Control Panel and is used to configure IP addresses and other such network information. The end user should not have to ever use the MacTCP control panel to modify their configuration once it is installed. Since all of the following applications use MacTCP, it is very important to have MacTCP installed on your machine.

UNT has a site license for MacTCP. You need a hard disk and an Ethernet connection or an AppleTalk connection that is gatewayed to the Ethernet. If you need a network connection, you should first contact your network administrator. If you do not have a network administrator in your department, then contact either Academic Computing or Network Support for installation.

NCSA Telnet

NCSA (National Center for Supercomputer Applications) Telnet supports both telnet and FTP. NCSA Telnet allows multiple Telnet sessions in multiple windows which is a nice feature. Unfortunately, the FTP program uses a UNIX-like interface instead of a Macintosh interface.

NCSA Telnet is available for free. It is already installed on a few file servers around campus including many of the General Access Labs. Mac users who do not have a file server can request installation from either Academic Computing or Network Support.

Brown TN3270

Brown TN3270 allows Mac users to log in to IBM Mainframes and emulate a 3270 terminal. It is available for free and can be acquired from either Academic Computing or Network Support.

Fetch & XferIt

Fetch and XferIt are versions of FTP that use a Macintosh Finder interface instead of a Unix interface. They are much easier to use than NCSA Telnet's FTP. Neither is supported by the Computing Center, but they can be acquired via anonymous FTP or Gopher off of SUMEX-AIM.STANFORD.EDU in the info-mac/comm directory.

MacX

MacX is a version of the X Window System for the Macintosh. MacX basically allows your Mac to act as an X terminal. MacX requires at least 2 MB of memory, but we strongly recommend 4 MB. We have purchased a site license and are currently testing it. Look for a future announcement about distribution around campus. We will not support MacX on older small display Macs, such as SEs, because the product is next to useless on these machines. For more information about X, see the February 1992 issue of *Benchmarks* (Vol. 13, No. 2, pg. 18).

TurboGopher

TurboGopher is a Gopher client for the Macintosh. There are other Macintosh Gopher clients available for use, but we feel this one is the best and most supported of them. For more information about Gopher, see the June 1992 issue of *Benchmarks* (Vol. 13, No. 5, pg. 8). We are not currently distributing the client, but will be in the near future. Look for a future announcement.

Newsreaders

There are several Macintosh newsreaders available for reading USENET news. We are currently evaluating packages. Look for an announcement in the future.

WAISstation

There is a Macintosh WAIS (Wide Area Information Servers) client available for anonymous FTP on THINK.COM in the wais directory. Since the TurboGopher client allows access to WAIS databases, we are supporting this common interface to these facilities instead of WAISstation. The WAISstation program, though, offers more functionality for advanced WAIS users.

Network Time

There is a way to set your Macintosh's time accurately to within milliseconds

Please see MACIP on page 13.

The Network Connection

By Dr. Philip Baczewski, Assistant Director, Academic Computing Services and BITNET INFOREP (ac12@unt.edu).



This column is a continuing feature of Benchmarks intended to present news and information on various aspects of wide area networks.

Finding Electronic Mailing Lists Via a Database Search

I heard recently that you can tell the acceptance of a new technology by when people start using it as a verb. For example, "I'll E-mail you that document," or "FAX me that lunch order right away." I'm convinced that by now, **LISTSERV** must be a verb. With over 3000 BITNET mailing lists in existence today and new lists being created almost daily, it's getting harder and harder to find just the lists in which you are interested. Fortunately, one site on BITNET offers us some help in the pursuit of our BITNETting.

The **LISTSERV** at **NDSUVM1** maintains a service which allows you to search for a particular keyword in text bases of BITNET and Internet mailing list information. The following is an example database search. Lines like these can be sent as a mail message to the address **LISTSERV@NDSUVM1**:

```
//DBlook JOB Echo=No
Database Search DD=Rules (f=mail)
//Rules DD *
Select MEDIA in lists
Index
Select MEDIA in intgroup
Index
Select MEDIA in new-list
Index
```

In the above example, all items which contain the string "MEDIA" would be listed. The **LISTSERV** will process your request and send you a mail message which contains the output of your search. The information returned should be enough to allow you to subscribe to a particular mailing list.

To illustrate, here is some sample output from the above search example which used "MEDIA" as the keyword:

```
> Select media in lists
-> Database LISTS, 41 hits.

> Index
Ref# Listname Nodename #Sub List title
-----
0005 MEDIA-L BINGVMB 400 Media in Education
0735 ANIME-L VTVM1 84 Japanese animedia and other
animation news.
...

> Select media in intgroup
-> Database INTGROUP, 41 hits.
```

```
> Index
Item #   Date   Time   Recs   Subject
-----
000014  91/10/15 12:04   45   ACSOFT-L%WUVM.D.BITNET@CUNYVM.CUNY.EDU
000046  91/10/15 12:04   17   aon@POLYSLO.CALPOLY.EDU
...

> Select media in new-list
-> Database NEW-LIST, 48 hits.
> Index
Item #   Date   Time   Recs   Subject
-----
000052  89/04/19 17:37   47   NEW LIST: EMUSIC-L or EMUSIC-D -
                                Electronic Music
000066  89/05/25 08:52   35   NEW LIST: Film-L Film Making and
                                Reviews
...
```

Notice that there are three sections, one corresponding to each search request you made. You can subscribe to the BITNET LISTSERV mailing lists by sending the command: **SUB listname your_full_name** to the nearest LISTSERV installation (in UNT's case LISTSERV@UTDALLAS).

In the case of the third search above, with a little more work on your part there is additional information that can be retrieved from LISTSERV@NDSUVM1. The

List of the Month

Each month we will highlight one BITNET, Internet, or USENET Special Interest Group (SIG) mailing list. This month's list...

SYS7-L on LISTSERV@UAFSYSB or LISTSERV@UAFSYSB.UARK.EDU

SYS7-L is a new list dedicated to the discussion of issues related to the installation, configuration, features and product compatibilities of the Macintosh Operating System version 7.0. Full discussion of all topics related to this subject are appropriate for the list, which will be unmoderated unless moderation becomes necessary to reduce the traffic to a reasonable level. To receive a list of files send the command **INDEX LISTNAME** to **LISTSERV@UAFSYSB**.

Owner: David Remington **AVIDR@UAFSYSB.BITNET** or **AVIDR@UAFSYSB.UARK.EDU**

*To subscribe to SYS7-L, send the following command to LISTSERV@UAFSYSB via mail text or interactive message: **SUBSCRIBE SYS7-L Your_full_name** where your_full_name is your first and last names.■*

items actually refer to postings from the NEW-LIST mailing list which is maintained on that LISTSERV. You can send for a log file containing the particular message based upon the information returned by the database search. To do so, send the following command as an interactive message or the first line of a mail message to **LISTSERV@NDSUVM1: SEND NEW-LIST LOGyymm** where instead of the letters **yymm** you substitute the corresponding month and year found in the "Date" column of the database search output. Note that logs are available only for searches on the NEW-LIST Database.

For more information on LISTSERV database searches see the file **LISTSERV DBMEMO** on the CMS D disk. You can also send for this file from the closest LISTSERV installation by using the command **SEND LISTDB MEMO.■**

MACIP continued from page 12.

of an atomic clock using the Network Time Protocol (NTP). The Macintosh program is called Network Time and is available via anonymous FTP on **ARCHIVE.UMICH.EDU** in the **/mac/system.extensions/cdev** directory. Configure it to get its time from the node **CHIMER.UNT.EDU**.

Mail Packages

We currently do not recommend or support any of the Internet based Macintosh mail packages such as Eudora. If you have a Macintosh and need to send/receive Internet mail, contact your network manager or the E-mail analyst about getting access to Pegasus Mail.

Many other Macintosh networking packages exist such as talk, finger, and nslookup. The majority of them are available from either **SUMEX-AIM.STANFORD.EDU**, **WUARCHIVE.WUSTL.EDU** or **ARCHIVE.UMICH.EDU. ■**

General Information

General Access Lab Thanksgiving and Semester Break Hours

LOCATION	DATES	TIMES
ACS Lab (ISB 110)	Nov. 25	7:30 a.m.-6 p.m.
	Nov. 26	CLOSED
	Nov. 27	8 a.m.-5 p.m.
	Nov. 28	9 a.m.-9 p.m.
	Nov. 29	1 p.m.-Midnight
	Dec. 18	7:30 a.m.-6 p.m.
	Dec. 20	CLOSED
	Dec. 21-23	8 a.m.-8 p.m.
	Dec. 24-Jan. 3	CLOSED
	Jan. 4-8	8 a.m.-8 p.m.
	Jan. 9-10	CLOSED
	Jan. 11-15	8 a.m.-8 p.m.
	Jan. 16	9 a.m.-6 p.m.
	Jan. 17	1-10 p.m.
College of Business (All labs)	Nov. 25	8 a.m. - 4 p.m.
	Nov. 26	CLOSED
	Nov. 27-29	8 a.m.-8 p.m.
	Nov. 29	Noon-11:45 p.m.
	Dec. 18	8 a.m.-4 p.m.
	Dec. 19-Jan. 17	CLOSED
Chilton Hall Labs (225, 116) Music (1007)	Nov. 25	8 a.m.-3 p.m.
	Nov. 26-28	CLOSED
	Nov. 29	1-10 p.m.
	Dec. 18	8 a.m.-5 p.m.
	Dec. 19-Jan. 17	CLOSED
GAB Labs (330, 550)	Nov. 25	8 a.m.-6 p.m.
	Nov. 26-28	CLOSED
	Nov. 29	2 p.m.-Midnight
	Dec. 18	8 a.m.-5 p.m.
	Dec. 19-Jan. 17	CLOSED
Matthews (309)	Nov. 25	8 a.m.-5 p.m.
	Nov. 26-29	CLOSED
	Dec. 18	8 a.m.-5 p.m.
	Dec. 19-Jan. 17	CLOSED
SLIS Lab (ISB 205C)	Nov. 25-29	CLOSED
	Dec. 18	1-5 p.m.
	Dec. 19-Jan. 17	CLOSED
Terrill (309) Wooten (120)	Nov. 25	8 a.m.-6 p.m.
	Nov. 26-28	CLOSED
	Nov. 29	Noon-6 p.m.
	Dec. 18	8 a.m.-5 p.m.
	Dec. 19-Jan. 17	CLOSED
Willis Library	Nov. 25	Close 8 p.m.
	Nov. 26	CLOSED
	Dec. 23	Close 8 p.m.
	Dec. 28-31	Open 1-5 p.m.
	Jan. 1-3	CLOSED ■

New User-ID Request Forms Coming

By Don Swatloski, Administrative Database/Central Programming Team

In order to improve our service, we have modified the User-ID request form (F-020-01) and the User-ID update form (F-020-02). Some of the changes are cosmetic; others change the options that were available.

Points to be considered on the new User-ID request form (F-020-01) are:

- ☐ **PART 1:** Additional request on the Mailing Address line for students to include a telephone number. This information is needed to give the Computing Center employee contact information for the individual. In particular, students requesting individual IDs need to provide a telephone number. Having the phone number will allow the Computing Center to reach the student if there is a question about the request that needs to be resolved.
- ☐ **PART 2:** The option of requesting User-IDs prior to the production of class rolls has been removed. Now instructors need only check the UNT CLASSROOM IDs type and provide the course information. If the request is sent to the Computing Center before class rolls are prepared, then the request will be held for processing until the class rolls are done (i.e., first class day).
- ☐ **PART 3:** With the desire to move off the MUSIC software, requests for access to this software will need to be approved by the Director of Academic Computing Services.
- ☐ **PART 4:** The LIBRARY ACCESS portion has been identified as pertaining to the use of the utility UEDIT. People who feel that they need this type access should consult with the project team leader of the programming group responsible for

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their department. If there is not a group that provides support, then the question should be forwarded to the Director of Administrative Computing.

Points to be considered on the User-ID update request form (F-020-02) are:

- ☐ **PART 1:** Individual student requests should have the student's point of contact telephone number in the space identified for Department Phone Number.
- ☐ **PART 2:** A reminder that if changes are required for the administrative systems, then page 2 should be reviewed and the appropriate update information provided.
- ☐ **PART 4:** The indication that MUSIC will require the approval of the Director of Academic Computing Services was added.
- ☐ **PART 5:** A place to identify both the days of the week desired and the time of day needed to support the user have been set. LIBRARY ACCESS is identified as relating to the utility UEDIT processing.

The revised forms are identified with the revision dates of 09/18/92 for the User-ID update form, and 09/21/92 for the new User-ID request form. The new forms may be used immediately. You may pick up a supply of these forms in the Computing Center, ISB 119. In order to reduce the amount of confusion and to permit Computing Center employees to speed up processing of all requests, obsolete forms should not be used after December 1, 1992. After that date old forms received by the Computing Center will be returned to the requestor with no action being taken.■

Choosing an Alternate Platform to MUSIC

By Dr. Philip Baczewski, Assistant Director of Academic Computing (ac12@unt.edu)

When MUSIC was originally installed for use on the NT campus, the choices for a high-performance computing platform were quite limited, both in general and locally as well. MUSIC has traditionally been used as a job preparation and submission system for processing under the MVS batch system. This is particularly true for those whose primary activity has been running statistical analysis jobs using the SAS or SPSS languages.

The computing landscape has changed quite a bit since MUSIC was first adopted, a fact which is quite evident when you examine the specifications of the mainframe in use at that time. The NAS AS/5000 computer that first supported MUSIC had four megabytes (4 Mb) of memory and operated at a speed of approximately one hundredth of a megahertz (.01 Mhz). Although the comparison is not exact, it is possible these days to purchase a microcomputer with equal or greater memory and an operational speed which is thousands of times faster for as little as around \$1000 (a 33Mhz 80386 system with 8Mb of memory, for example).

This comparison is drawn to illustrate the fact that the mainframe is not the only option when choosing an alternative system to the MUSIC and MVS combination. Academic Computing Services not only supports additional host computer systems, but the computing power available on alternative systems has greatly increased as well.

VM/CMS

In making the transition from MUSIC to another platform, VM/CMS will offer the most similar environment. CMS supports all of the activities which were available via MUSIC — editing and job submission to MVS, interactive access programming language compilers, mail access to BITNET, etc. — and more: interactive access to SAS and SPSS, full access to BITNET, access to the Internet, and a more up-to-date selection of programming language compilers.

Microcomputers

CMS is not the only choice, however, when selecting a new platform for your activity. In the area of statistical programming, for example, many faculty members have moved to the microcomputer platform for instruction. The development of microcomputer laboratories on campus, both specialized and general access, has made these platforms more accessible to students. Microcomputers offer the student the advantage of less complicated access to the statistical programming environment and the ability to archive their work on portable and inexpensive floppy diskettes. Because Academic Computing Services maintains site licenses for SPSS/PC, SPSS/Macintosh, and SAS/PC, these programs are easily made available in a lab environment via their installation on a Novell file server. You may also find that many of your individual statistical processing needs can be easily met by one of these microcomputer programs.

Solbourne (UNIX)

For those whose research demands high performance statistical processing in SAS, especially work which is CPU intensive, Academic Computing's Solbourne UNIX minicomputer offers such a platform. Although the UNIX operating system can be somewhat

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mysterious at first, once you enter the SAS programming environment, your interaction with the system will be very similar to working within the PC or CMS versions of SAS. FORTRAN and IMSL are also available on this high-performance platform. Work is in progress to make the CRSP and COMPUSTAT data collections available on the Solbourne.

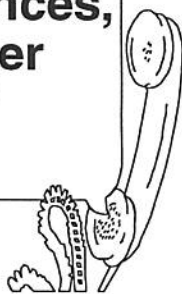
Just for Electronic Mail

If you've been using MUSIC primarily for BITNET mail, you might wish to investigate whether Pegasus mail is available on your departmental file server. Pegasus mail offers access to both BITNET and the Internet directly from your PC. Another popular platform for E-mail is ACS's VAX/VMS system which offers access to BITNET, the Internet, as well as many other wide-area network resources.

Further Information

Hopefully, one or more of the above platform choices will be able to serve your computing needs in the place of MUSIC. If, however, you have any questions in regard to choosing an alternative platform to MUSIC, please feel free to contact Dr. Philip Baczewski, Assistant Director of Academic Computing Services (565-3886, ISB 119), or one of the other Academic Mainframe consultants. ■

Calls For Papers, Conferences, And Other Items of Interest



We have received the following "calls" and announcements from various organizations.

Call for Articles, Papers, Proposals, Reviewers

□ **ED-TECH Review** — A new quarterly, nonelectronic, magazine is premiering in January 1993. ED-TECH Review is devoted to the issues and applications of educational technology to enhance learning and teaching. Articles are invited on any aspect of educational technology in

schools and colleges. Contributions may include: Current issue discussions; Review papers; Reports on innovative projects; Book/product reviews; Tutorials; Opinions; News Briefs; Courseware experiences. For more information, contact Ed-TECH Review, AACE, P.O. Box 2966, Charlottesville, VA 22902 USA, Phone: (804) 973-3987, FAX: (804) 978-7449, Internet: aace@virginia.edu.

□ **Interpersonal Computing and Technology (IPCT): An Electronic Journal for the 21st Century** — Articles are being accepted for inclusion in future issues of this new electronic journal. The journal will be coordinated with and issued through the Interpersonal Computing and Technology Discussion List (ipct-l@guvm.georgetown.edu), a list maintained, moderated and operated at Georgetown University. For more information contact Gerald M. Phillips (gmp@psuvm.psu.edu).

□ **Science & Technology Libraries**, a periodical published by The Haworth Press, is looking for book reviewers in the areas of mathematics, statistics, computer science, geology, oceanography, metallurgy, mining, general technology (do-it-

yourself handbooks, etc.), physics and astronomy. Contact Donna Lee, Editor, New Reference Works in Science and Technology, *Science & Technology Libraries*, Dana Medical Library, University of Vermont, Burlington, VT 05405 Phone: (802) 656-4415 Internet: dlee@uvmvm.uvm.edu.

□ **Second International Symposium on Telecommunications in Education: Global Connections, November 10-13, 1993, Informart, Dallas, Texas** — Abstracts of papers, poster/demonstration sessions, and panels should be submitted by **January 30, 1992**. Topics of interest include: Addressing rural needs through telecommunications; Educational telecommunications in the developing world; Indigenous people and telecommunications; Models of connectivity; Instructional telecommunications models; Telecommunications and change; Global education and telecommunication; Policy and legal issues related to educational telecommunications; Research and evaluation of educational telecommunications; Multimedia and telecommunications. For more information contact Paul Resta, Phone: (512) 471-4014 FAX: (512) 471-4607 Internet: presta@utxvm.cc.utexas.edu.

□ **Student Papers, 31st Annual Meeting of the Association for Computational Linguistics (ACL-93), June 22-26, 1993, Ohio State University, Columbus, Ohio** — Papers should describe original, unpublished work in progress that demonstrates insight, creativity, and promise. Submissions must be received by February 1, 1993. Contact Linda Suri (ACL Student Sessions) Department of Computer and Information Sciences, 103 Smith Hall, University of Delaware, Newark, DE 19715 Phone: (302) 831-2712 FAX: (302) 831-8458 Internet: suri@cis.udel.edu. ■

Cheap/Free Macintosh Software

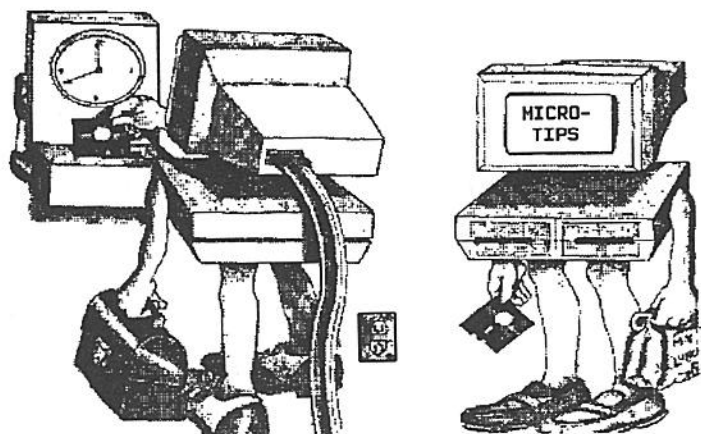
By Sean McMains, ACS General Access Lab Manager (mcmains@unt.edu)

The ACS General Access Lab (ISB 110) has recently made a large library of freeware and shareware available for the Macintosh that can be accessed by any Mac that is on the campus ethernet. It is divided into two principal volumes, a CD-ROM and a hard disk partition. The CD-ROM contains about 300MB of programs, graphics, fonts and utilities for the Macintosh, while the hard disk has a small assortment of excellent programs that have been released since the CD-ROM was published. The contents of the "Best of Macintosh" hard disk partition will be changing from time to time, as new programs become available that UNT students might find useful. The contents of the latter will be available as self-extracting archives, to make the most of the limited amount of hard disk space available.

Accessing the Programs

To access the programs, open the Chooser, which should be under the Apple menu. When it comes up, select the Appleshare icon. There will be a list of available zones immediately below; choose ISB ACS. Now, the name of the file servers in the zone will be displayed to the right. Choose BMUG PD-ROM from the list, and click on the "Ok" button below. A dialog box will appear asking you to log in to the server. Simply click on "Guest" and click "Ok." A list of volumes will appear. Shift-click to select the ones you want to access, and again click "Ok." You

Please see FREE on page 21.



*This column is intended to serve as a forum for sharing useful tips on making more productive use of microcomputers. If you have a tip that you feel may be of use to campus users, submit it to the **Benchmarks** Editor for possible inclusion in a future issue.*

How to Read PC Disks on a Macintosh and Macintosh Disks on a PC

*This article is taken from the "Ask Dr. Micro" column (drmicro@garnet.berkeley.edu) in **Berkeley Computing** (September 1992, Vol. 2 No. 6, pp. 3-8) the University of California at Berkeley computing newsletter. Portions of the article have been edited to reflect conditions at UNT.*

If you are equipped with the right hardware and software, you can use a Macintosh to read and write disks formatted by an IBM PC or compatible machine and use a PC to read and write Macintosh disks. Your computer will need to have floppy disk drives that are compatible with the type of diskettes used by the other type of computer, and you will need to have software that will allow your computer to recognize "foreign" disk and file formats.

Some applications come with the capability to "import" files created by another kind of computer once they have been transferred over to the other type of disk; often, the PC version of a program can read in a file created by the Macintosh version of the same program and vice versa. Because the respective operating systems used by PCs and Macintoshes differ in how information is stored in a file and because the specifics of how data are stored differ among application programs, you may need software that can translate among different file formats in addition to software for simply moving files over from one platform to another.

File Format Considerations

Although the software that can enable your Macintosh or PC to read and write foreign diskettes insulates you from most of the differences between DOS and Macintosh files, there are some differences that you should be aware of.

The conventions for naming files on PCs and Macintoshes are different; often it may be necessary to change the name of a Macintosh file when moving it to a PC. On the Macintosh, the names of files can be up to 31 characters long and can include spaces,

upper- and lowercase letters (although the Finder does not distinguish between upper- and lowercase letters), and a variety of special characters. In DOS, file names are limited to a maximum of eight characters with an optional three-character extension (separated from the file name by a period). DOS also converts lowercase letters to upper case, and many special characters cannot be included in file names. In addition to the actual name of the file, the Macintosh Finder needs to keep track of information associated with the file, including the position of the file's icon within its folders and four-character type and a four-character creator. Unlike DOS files, Macintosh files also normally have two parts — a data fork and a resource fork. Usually, you don't have to worry about all of these details, but if you are going to be transferring files between Macintoshes and PCs regularly, you should find out how the software you are using deals with these differences.

Floppy Disk Media Considerations

Although it is possible for a PC to format a diskette as a Macintosh disk and for a Macintosh to format a diskette as a PC disk, occasionally you may get an error message when attempting to reformat a disk. In particular, reformatting factory-formatted 800K Macintosh disks as 720K PC disks may present problems. In such cases, even though the reformatting process normally erases any data that may already be on the disk, you may need to use a bulk eraser (available from electronics stores) in order to reformat the disk successfully.

Using a Macintosh to Read and Write to PC Disks

If you have a Macintosh and want to read and write DOS-formatted disks from a PC, several hardware and software solutions may be available to you.

The Macintosh SuperDrive, a 3.5-inch double-sided, high-density floppy disk drive also known as an FDHD, can read and write double-density (720K) and high-density (1.44 MB) 3.5-inch PC disks. The SuperDrive is the standard floppy disk drive built into all Macintosh models except the original Macintosh (128K, 512K, and 512KE), the Macintosh Plus, the original Macintosh II, and the original Macintosh SE. Internal upgrades are available for all these Macintosh models except the original Macintosh models and the Macintosh Plus. (Third-party external SuperDrive-compatible floppy disk drives are available for the Macintosh Plus.)

If you need your Macintosh to be able to read 5.25-inch floppy diskettes, you will need to get an external 5.25-inch floppy disk drive. Although Apple no longer sells its 5.25-in PC floppy disk drive, external 5.25-inch floppy drives that can read and write double-density (360K) and high-density (1.2MB) disks are available from companies such as Dayna Communications, Inc., and Peripheral Land, Inc., (PLI).

Apple File Exchange

All versions of Macintosh System 6 and System 7 include a program called Apple File Exchange that allows you to format 3.5-inch high-density or double-density disks as DOS disks and to convert files from DOS format to Macintosh format and vice versa. Apple File Exchange requires a SuperDrive and can also be used with an external 5.25-inch drive. (See Figure 1.)

With Apple File Exchange, you can easily convert text or binary files from DOS format to Macintosh format and vice versa. Some applications, particularly those that are available for both Macintosh and PC platforms, such as Aldus PageMaker, Lotus 1-2-3, and Microsoft Word, can import DOS files that have been transferred over to the Macintosh using Apple File Exchange's default translation.

For other applications, it's likely that you will need to use a special translator file with Apple File Exchange. These translator files can convert files into

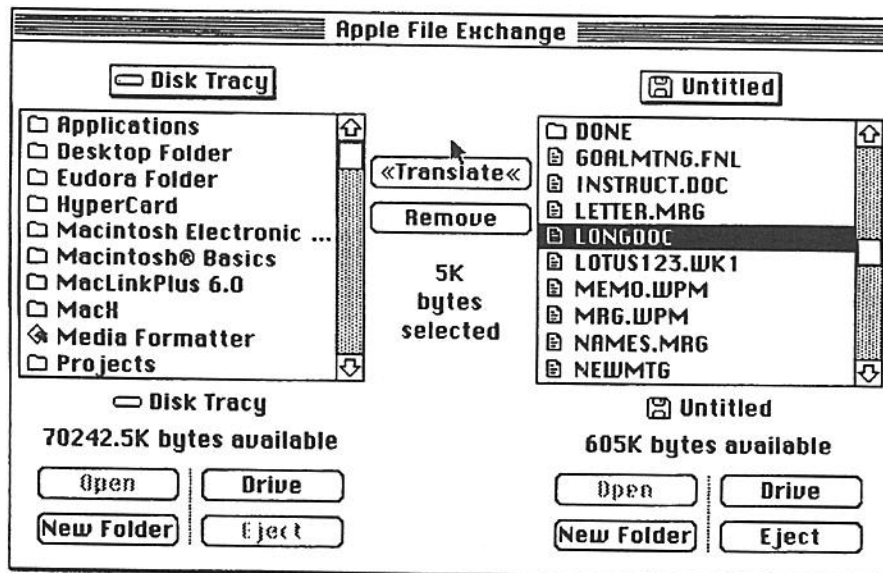


Figure 1

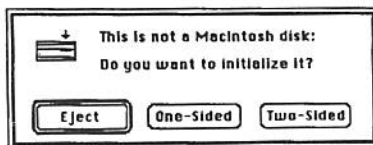
The Apple File Exchange program, which is included with Macintosh System 6.0 and all later releases, can be used to transfer files from PC disks to Macintosh disks.

forms usable by other applications on PCs or Macintoshes. Only one translator file is included with Apple File Exchange; this translator can convert between the MacWrite word processor format on the Macintosh and the DCA-FRT (Document Content Architecture/Revisable Form Text) word processor format on DOS. Many DOS word processing programs can save and import files in the DCA-RFT format.

If, however, you need to access a file created with a DOS word processing program and it was not saved as a plain text file or as a DCA-RFT file, you may need to get additional translator files. A commercial product called MacLink-Plus, from DataViz, Inc., includes translators for a variety of popular word processing, spreadsheet, database, and graphics applications.

Programs for Mounting DOS Disks

If you are not running a program such as Apple File Exchange and you insert a non-Macintosh disk into your computer, you will normally get a warning message such as the following (the exact message will vary depending on which version of the Macintosh system software you are running):



There are several commercial products that will allow your Macintosh equipped with a SuperDrive to recognize double-density (720K) and high-density (1.44 MB) 3.5-inch DOS disks. These products will display (mount) a DOS diskette as an icon on the Macintosh desktop. (See Figure 2.) You can open up this icon in the same manner as any other disk icon (by double-clicking on it or by selecting it and choosing Open from the File menu) and view the DOS files as icons. DOS subdirectories will appear as Macintosh folders.

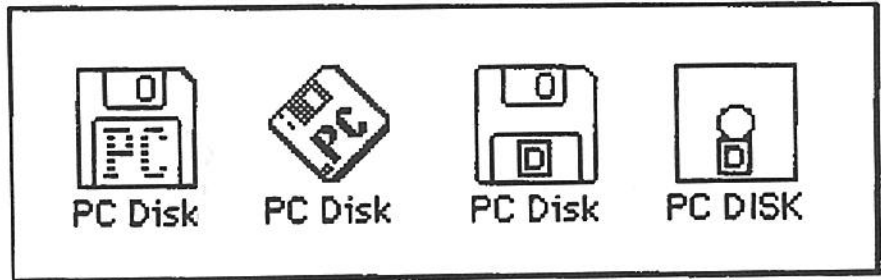


Figure 2

The first three icons above show what a mounted 3.5-inch DOS disk looks like mounted on the Macintosh desktop using PC Exchange, AccessPC, and DOS Mounter respectively. The fourth icon shows a 5.25-inch DOS disk mounted using DOS mounter.

With one of these programs, you can easily copy files to and from PC disks just by dragging the icons to and from the disks. If the program recognizes the extension of the file, it will give the file an appropriate icon; otherwise, the file will get a generic PC file icon. (See Figure 3.) These programs, which are

typically Control Panel devices, are less cumbersome to use than programs such as Apple File Exchange, but they do not provide file format translation.

These programs are most useful with Macintosh applications that can directly import PC files, such as the Macintosh versions of Aldus Page-

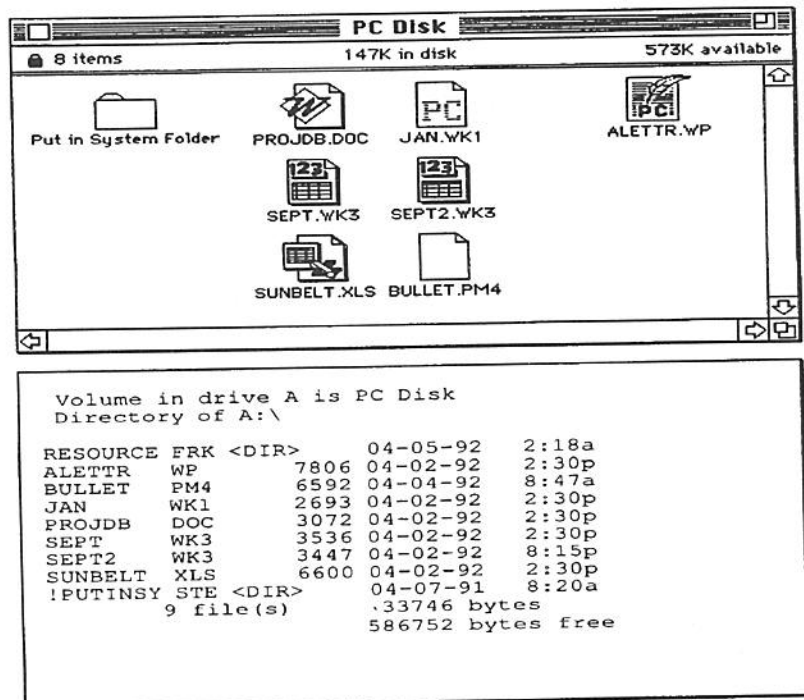


Figure 3

This figure shows two views of the same PC disk. On the top is how the disk looks on a Macintosh with the Apple PC Exchange Control Panel installed. On the bottom is how the disk appears using the DOS command DIR on a PC. The two directories RESOURCE.FRK and !PUNTINSY.STE were created on the Macintosh by the PC I Exchange Program.

Maker and Lotus 1-2-3, which can use the files created by their PC counterparts. It's possible to assign Macintosh applications as "creators" to DOS files so that the appropriate Macintosh applications start up when the user double-clicks on the icon for the DOS file.

Three programs that offer these capabilities are the following:

- **Macintosh PC Exchange from Apple** — requires System 7. It is not designed to be used with 5.25-inch disk drives.
- **AccessPC from Insignia Solutions, Inc.** — runs under System 6 or System 7 and can be used with third-party 5.25-inch floppy disk drives and with a number of types of removable hard disk and optical media.
- **DOS Mounter from Dayna Communications, Inc.** — runs under System 6.0.2 and all later versions, and is included with MacLinkPlus from DataViz and is also available separately from Dayna. DOS Mounter can be used with the Apple 5.25-inch PC disk drive and, like AccessPC, with a number of other removable media types.

DOS Emulation Products

The software products described above will let you transfer files to and from PC diskettes, but they will not let you run PC software on your Macintosh. If you would like to run DOS software on your Macintosh, you will need a PC emulation program. Insignia Solutions has developed three PC emulation programs (Entry Level SoftPC, Universal SoftPC, and SoftAT). These programs can directly access DOS disks. There are also hardware-based PC emulation products, such as the Orange 386 from Orange Micro, Inc., that are essentially a complete PC on a card that plugs into the Macintosh; these products offer better performance but are more expensive.

Using a PC to Read and Write Macintosh Disks

Any IBM PC or compatible computer equipped with a double-sided, high-density 3.5-inch disk drive can read and write high-density 1.44 MB Macintosh floppy disks (formatted on an Apple SuperDrive or similar floppy disk drive) with special software. All current IBM PS/2 models include these drives as standard equipment, and these drives are available as options for older IBM PCs and compatible machines.

Without special hardware, it is not possible for PCs to read 800K (double-density, double-sided) Macintosh disks. An adapter board called the Deluxe Option Board can enable PCs to read and write 800K Macintosh diskettes. This board is available from Central Point Software, Inc., and it works with PCs that use the original IBM PC bus or PC AT bus. The Deluxe Option Board comes with software for reading and writing Macintosh disks.

PCs do not come with software analogous to Apple File Exchange, but there are commercial software packages that allow PCs to read and write high-density Macintosh disks:

- **Mac-In-DOS** — There are two versions of this program, one for DOS and one for Microsoft Windows. This program is produced by Pacific Micro.
- **Mac-to-DOS** — This program, which is produced by Peripheral Land, can also read other Macintosh media types (including Bernoulli cartridges and PLI removable media) in addition to high-density 1.44 MB Macintosh disks.

These programs can be used in conjunction with PC applications that can directly import files created by their Macintosh counterparts. If you need to use Macintosh files on your PC and your PC applications cannot import

them directly, then it might be a good idea to have the file format translation done on the Macintosh using a product such as MacLinkPlus.

How to Contact Vendors

If you are interested in finding out more about any of the commercial products discussed in this article, you can contact the vendors directly:

- **Apple Computer, Inc.** — 20525 Mariani Avenue Cupertino, CA 95014 (408) 996-1010
- **Central Point Software, Inc.** — 15220 N.W. Greenbrier Parkway, Suite 200, Beaverton, OR 97006-9937 (800) 445-1695
- **DataViz, Inc.** — 55 Corporate Drive, Trumbull, CT 06611 (203) 268-0030 FAX: (203) 268-4345
- **Dayna Communications, Inc.** — 50 South Main, 5th Floor, Salt Lake City, UT 84144 (801) 531-0600 FAX: (801) 359-9135
- **Insignia Solutions, Inc.** — 526 Clyde Avenue, Mountain View, CA 94043 (415) 694-7600 (800) 848-7677 FAX: (415) 946-5434
- **Orange Micro, Inc.** — 1400 N. Lakeview Avenue, Anaheim, CA 92807 (714) 779-2772
- **Pacific Micro** — Pacific Microelectronics, Inc., 201 San Antonio Circle, C250, Mountain View, CA 94040 (415) 948-6200 FAX: (415) 948-6296
- **Peripheral Land, Inc.** — 47421 Bayside Parkway, Fremont, CA 94538 (501) 657-2211 (800) 288-8754 FAX: (510) 683-9713 Apple Link: D0495 (D0495@applelink.apple.com) ■

FREE continued from page 17.

will now be connected, and the volumes should appear on your desktop, ready to go. You can close the chooser, and continue to use the volumes as you would any other.

Further Information

If you have any questions or comments about the system, you can call the ISB computer lab at x3048, send E-mail to Eriq Neale (neale@unt.edu), or compose a text file and drop it in the folder named "Suggestion Box" on the "Best of Macintosh" volume. ■

Administration Building Gets New Network

By Mike Murdock, E-Mail Analyst (murdock@cc1.unt.edu)

The Administration Building has received a general-use Novell network that is named ABN. It will provide electronic mail services for personnel throughout the Administration Building, which will reduce the need for E-mail systems on multiple computers.

WordPerfect Office Mail users and Pegasus e-mail users on the Novell network AAO have had their mailboxes moved to ABN effective September 30, 1992.

If you use WordPerfect Office (WPO) Mail or Pegasus (Pmail) and send E-mail to users on AAO, please read the following sections that apply to your use of our E-mail systems:

- ① **WordPerfect Office Mail Users:** Only replies to WPO Mail already received from users on AAO will be forwarded to mailboxes on ABN until October 31, 1992. **Effective November 1, 1992, E-mail replies destined for mailboxes on AAO will no longer be forwarded to mailboxes on ABN.**
- ② **Using Personal Groups in WPO Mail:** If you have created "Personal Groups" in WordPerfect Office Mail which allow you to do group mailing to users you have specified, **all addresses containing AAO must be changed. You must change the letters AAO to ABN.** Otherwise your WPO Mail sent to users on AAO will not be deliverable.
All global WordPerfect Office groups have been changed. You need only change the personal groups that you have created. This can be accomplished using the WordPerfect word processor or any text editor. Save your work as DOS text.
- ③ **Pegasus (Pmail) Mail Users:** All users on Novell network AAO shall now be reached via Novell network ABN. Pmail messages addressed directly to users on the Novell server AAO (example: AAO/login_id) will **not** be forwarded to mailboxes on ABN.
- ④ **Wide-Area Network Users:** All wide-area network E-mail (Internet, Bitnet, THEnet, etc.) including replies destined for mailboxes on AAO will be forwarded to Pegasus mailboxes on ABN until October 31, 1992. AAO's Internet node name is now ABN.UNT.EDU. **Effective November 1, 1992, E-mail destined for mailboxes on AAO will no longer be forwarded to mailboxes on ABN.** ■

GimmeFest II: The Year of the T-Shirt

By Eriq Neale, ACS General Access Lab Manager (neale@unt.edu)

Finally, a year of waiting is almost over. We arrived at the site a half an hour early at 9:30am, but I needed to pick up my registration card. Sometimes, that process takes a while. This year, fortunately, it didn't. Next we wandered around the waiting areas since the opening was not until 10:00. We bumped into several people we knew, and a bunch of people we didn't know bumped into us, literally. As one of us observed, if there was a four foot space to our right-hand side, people would still bump into us from behind on the left. Then we arrived at the main entrance, patiently waiting just outside the doors, observing the flurry of activity within and without the area. Anticipation began to well up inside as the clock moved ever closer to 10:00, opening time. At last, at 10:03, we were admitted, like cattle, into the exhibit hall. Network '92 Dallas had begun.

Overview

Network is the world's largest computer networking trade show and a gimme lover's paradise. Vendors spend unimaginable amounts of money on eye-catching displays to promote their product(s). They also have thousands and thousands and thousands (wouldn't Carl Sagan be proud?) of copies of various slicks to give to conference attendees to take back to their place of work and to decide how soon they can purchase said product(s).

But what never ceases to amaze me, and yet I've come to expect it, is how much time and effort vendors will spend to design "gimmes" to pass out to conference attendees so they will take them back to their workplace and display

them in prominent places to help advertise the name of the product or company. Some are useful (the QuickMail coffee mug from last year's Networld), some are fashionable (the WordPerfect white baseball cap), and some are truly outlandish (the neon orange baseball cap from Shiva). There are pins, pens, screwdrivers, buttons, posters, key rings, letter openers, luggage tags, you name it. Just about anything gimmicky or semi-useful can be found as a gimme at a number of exhibitor booths.

But the most prized treasures, at least in my eyes, are the vendor/product T-shirts. My first year at Networld two years ago I didn't nab a T-shirt. I only went for part of the day on the last day and was too involved in trying to get useful information from the vendors to notice the freebies being handed out. Last year, I also failed to nab a T-shirt of any kind, again because I attended on the last day, but by the time I figured out where the T-shirts were to be had, they had all been distributed. I had once again missed getting the coveted Networld T-shirt. But this year, I vowed to collect all the T-shirts possible. And that proved to be quite a challenge!

Day One

The first thing I did after getting by the guard at the main gate (remember the cattle analogy) was to head straight for the WordPerfect booth. Last year, I spent almost two hours trying to sit in the WP presentation to get the way-cool WordPerfect hat. Figuring that this year would be no less, I hit the first presentation, long before crowds began to fill the 30 or so seats. And, as guessed, another way-cool hat was given to the attendees. This year, sort of an aqua color with "WordPerfect Office 4.0" embroidered on the front (so sue me; I like hats). We were then encouraged by WordPerfect to sit through the neighboring presentation on other WordPerfect products to receive a neon yellow fanny pack (butt bag, hip pouch, what-

ever you want to call the things) and a WordPerfect wrist pad. We headed over immediately following the presentation only to find a very small number of seats completely filled. In fact, I went through the entire first day without making the presentation.

We decided then to begin hitting the booths of the big vendors, so we moved on to the Novell booth and our first step towards T-shirt acquisition. At last year's show, Novell had a game to get their T-shirt. This involved going around to several other booths and collecting some item to put in a booklet to return to the Novell booth in exchange for a T-shirt. It seemed rather involved,

Networld is the world's largest computer networking trade show and a gimme lover's paradise.

and I didn't have much time, so I opted out of playing last year. This year, I played the game. Novell gave each person who requested one a "passport" for the trade show. We got our photos taken and placed in the passport and then set out to find vendor booths sporting the "Yes it works with Novell" banner to get a stamp for our passport. The trick? The passport has to contain a stamp with the word "Yes" in eight different languages before you could get the T-shirt. Out of the 9 stamps I collected the first day, only six of the stamps were unique (quite a few places had stamps with "Oui" on them for some reason). It became even more interesting going to these marked booths and trying to guess which stamp they had without actually asking the booth person to stamp the passport.

Next stop was Microsoft's exhibit for our first actual T-shirt acquisition. We picked up a card from the main booth which, after sitting through a rather unusual presentation that I still don't un-

derstand completely, we had to take to two different mini-presentations at the Microsoft booth to get stamps. We watched the Windows NT and the Windows NT Administration demos, asked some honest questions, and ran that card back to the main desk to get the Microsoft Networld Dallas T-shirt. Ahhhhhh! At the presentation, the booth workers randomly tossed out a few Microsoft Windows hats to people in the audience. I wanted one badly, but nothing was thrown in my general direction, though Patrick, who was sitting next to me, nabbed one as it flew by. Later he told me that he gave it to the person next to him who should have caught it in the first place, because he didn't want a Microsoft Windows hat. After I growled at him for a few minutes, we continued on. He later gave me the WordPerfect hat he got earlier.

As we first came in the exhibit hall, one of us noticed some rather clever mouse pads at the IBM booth, so we headed off to the booth to see their presentation and see what we could get from them. Lo and behold, after the presentation, they handed out the very same way-cool mouse pads (it's sitting under my mouse even as I write this). The IBM presentation was interesting in that it featured real-time computer animation that interacted with both the presenter and the audience. Just one, as I soon noticed, of the presentations designed to be entertaining as well as informative.

Next came the "difficult" shirts. I say "difficult" because there was quite a bit of work that went into qualifying to get the vendors' shirts. The first we went for was from Cheyenne at their booth which displayed four of their major product focuses. The challenge was to collect all five puzzle pieces by going to each of the demo stations. Once all five were collected and placed on a special card, they gave you a T-shirt and put your card in the drawing for a computer. The T-shirt isn't bad. I kinda doubt I got the computer, though.

The last tough acquisition of the day came from the Intel booth (last year they just gave away a poster). At their large area, they had 20 product stations set up. You had to visit 5 of the 20 and get your card stamped by the demo person to be eligible for the shirt (do you see a pattern forming here? I sure do). The booth was very informative as well, though, and I picked up quite a bit of product info. As well as an extra large.

The easiest T-shirt that we picked up that day was from the Banyan booth. When you came in to sit through their presentation, they had a T-shirt draped over the back of the canvas chair. You just can't get much easier than that. We waited about 10 minutes for the presentation to start. Three musicians came out (a guitar, a banjo, and a mandolin) and played a few folk-style songs that had no relation to Banyan or the show at all. I thought it was quite enjoyable and a nice break from all the computer hype everywhere else. They broke after about ten minutes to introduce Sam the Human Android, who billed himself as "the next step in stand-up comedy." If you ever get a chance to see this guy perform, do so! He had a very good act, all the way down to the plastic hair. And the jokes were cornball enough to keep me rolling.

The first day of the show netted us more than just T-shirts, too. We sat through a demo of the AirLAN wireless network adapter from Solectek and came away with a white cap. We got mouse pads from IBM and PC WEEK magazine, demo diskettes (which can always be erased and used for other purposes, right?) several computer-related magazines, all kinds of product info, and a handful of buttons and pins. All in all, not a bad day no matter how you look at it.

Day Three

Wait, day three? What happened to day two? Well, we only attended Tuesday and Thursday, days one and three of the

show. The big item for Thursday was learning how many more goodies there were to be had that we just could not get to. The GTE booth had a T-shirt, but it would have taken 15-20 minutes to earn it. There was a nice shirt being given away at the Univel booth, but you had to sit through the demo to get a chance to answer a question and get a shirt (read: no guarantees). We did get a nice mouse pad from them, though. We did pick up a cap advertising LANAlert, a plastic orange "slinky" from IWI, a pocket screwdriver (slot head) from BancTec Service Corporation, and of course buttons and buttons and pins and

The best joke of the show came from Sam the human android . .

buttons. And I can't forget the poster from Asante.

The easiest shirt we did grab hold of throughout the entire show we got on Thursday. Having an ulterior motive (a "suggestion" from my boss), I went to the Centrum booth to look into their remote access communications hardware. I asked them about their product, I got their slicks, and as we were walking away, the gentleman we had just talked to asked us what size we wore. Naturally, the answer was extra large.

Day three was not as "gimme productive" as day one, but we didn't get to spend as much time in the exhibit hall just roaming for goodies. We attended a two hour presentation on the much-awaited NetWare 4.0, we had several specific vendors we had to visit and ask questions of, and we had to eat lunch. Man! I'm seriously considering taking out a loan to cover the cost of food at next year's show! But where we didn't get too much in the way of "stuff," we did come out with some really good information about new trends and products that hold interest to us in the coming year. The show ended promptly at

4:00 Thursday afternoon with a flashing of the exhibit hall lights and a surge of applause from the attendees and the vendors, who were rapidly breaking down their booths to catch their night flights out of Dallas.

Best of Show

My personal award for "best of show" goes to CORE International and their movie "Dead Drives Don't Whine." A wonderful piece of bad cinema, highly entertaining, that included a movie pass to an AMC theater. Definitely worth the admission price! The best quote of the show came from the Shiva demonstrator: "...which happens to be in Iowa, immediately to my left." The best joke of the show came from Sam the human android, talking about his favorite ethnic group, androids, whom he claims prefer to be called "synthetic Americans." It goes like this: "What do you call a Synthetic American that is a drug addict? A Coke Machine!"

Post-show Season

To end on a sad note, we didn't pick up the Novell T-shirt, even though we managed to finally locate that eighth stamp. Novell ran out of T-shirts Wednesday around noon because, as it turns out, eight unique stamps were not needed to get the shirt. Argh! We also missed the goodies at the Quarterdeck booth where, I found out a week after the show, they were giving out quite a few radio-controlled blimps. I would have killed for one of those!

So as I begin to advertise for various vendors by wearing their company or product names, I think fondly of the show and have a few suggestions for next year, in case anyone is listening. My final tally was three caps, six T-shirts (I also got one from attending BrainShare on Monday), a poster, twelve buttons and pins, a screwdriver, a name tag, four plastic information bags, a floppy-flying thing, and an orange "slinky." ■



Virus Update

Compiled by Claudia Lynch, *Benchmarks* Editor (as04@unt.edu)

The following information comes from the VIRUS-L Digest.

General

- A **FAQ (Frequently Asked Questions)** document and all of the back issues of *VIRUS-L Digest* are available via anonymous FTP on cert.org (102.88.209.5).
- An **antivirus BBS List** has been compiled by Rob Slade (rslade@sfu.ca). Following are some highlights of the list. The entire list was posted to VIRUS-L and contained in the Digest of Tuesday, 29 Sept. 1992 (Vol. 5, Issue 157):
 - ☐ **Ross Greenburg Software Concepts** — Phone: (212-889-6438).
 - ☐ **Gilmore Systems** — Phone: (213-276-5263).
 - ☐ **Trend Micro Devices Inc.** — Phone: (213-320-2523).
 - ☐ **Ashton-Tate/Borland** — Phone: (213-324-2188).
 - ☐ **Master Control** — Dallas, TX Phone: (214-238-1805) Fidonet: (1:124/5107).
 - ☐ **Stiller Research Runway BBS** — Phone: (215-623-4897).
 - ☐ **Nerd's Nook (HST)** — Phone: (216-356-1431) Fidonet: (1:157/3)
 - ☐ **Certus International** — Phone: (216-752-8134).
 - ☐ **Treasure Chest** — South Bend, IN Phone: (219-234-8004) Fidonet: (1:227/3).
 - ☐ **VFR Systems** — Phone: (219-273-2431) Fidonet: (1:227/190).
 - ☐ **The Combat Zone** — Phone: (301-863-5312) Fidonet: (1:2612/10).
 - ☐ **National Institute of Standards and Technology** — Phone: (301-948-5717).
 - ☐ **Big Hole (HST)** — Phone: (315-377-0281) Fidonet: (2:283/303).
 - ☐ **The Razor's Edge** — Richmond, RI Phone: (401-364-6343) Fidonet: (1:323/401.0).
 - ☐ **SpacePort Atlanta** — Phone: (404-443-8693) Fidonet: (1:133/524.0).
 - ☐ **Atlanta-Atlanta PCUG** — Phone: (404-879-5985).
 - ☐ **The Bargain BBS** — Lawton, OK Phone: (405-248-0528) Fidonet: (1:385/17.0).
 - ☐ **Symantec/Peter Norton** — Phone: (408-973-9598).
 - ☐ **McAfee BBS** — Phone: (408-988-4004).

WordPerfect User's Group

The WordPerfect User's Group continues to meet in the SCS Lab, Chilton Hall 255 from 2-3 p.m. for the rest of the fall semester:

- **November 20** — Demo of new graphics package, Presentation 2.0 by WP representative, Colby Ward.
- **December 18** — Tables. ■

- ☐ **International Microcomputer Software** — Phone: (415-454-2893).
- ☐ **Foley Hi-Tech Systems** — Phone: (415-826-1707).
- ☐ **International Computer Virus Institute** — Phone: (503-488-2251).
- ☐ **Intel Corp.** — Phone: (503-645-6275).
- ☐ **The Rendezvous BBS** — Bastrop, TX Phone: (512-321-1324) Fidonet: (1:382/92).
- ☐ **RG Software Systems** — Phone: (602-970-6901).
- ☐ **TheCage** — Phone: (604-261-2347).
- ☐ **CyberStore** — Phone: (604-526-3676).
- ☐ **Deep Cove** — Phone: (604-536-5885) Fidonet: 1:153/915).
- ☐ **Calmer Software Services** — Phone: (612-482-1716).
- ☐ **Challenged-I** — Kingston, ON Phone: (613-547-2479) Fidonet: (1:249/138).
- ☐ **Steve Tibbett** — VirusX for Amiga Phone: (613-731-3419).
- ☐ **NetLink Online Communications** — Phone: (619-457-1836).
- ☐ **OS/2@Manassas** — Phone: (703-369-0672) Fidonet: (1:265/101).

IBM and Compatible PCs

- **Independent reviews of PC antiviral products** is available via anonymous FTP on cert.org (192.88.209.5) in the directory pub/virus-l/docs/reviews.
- **The first virus to successfully spread under the Windows operating environment** using the native NE format has been found in Sweden. It is called Win_Vir.14 (*Virus-L Digest*, Monday, 28 Sept. 1992, Vol. 5 Issue 156). ■

VAXCLUSTER USAGE STATISTICS

September Top Ten Programs: CPU Time Used

Program	Description	CPU Time	Percent of Total
1. GAUSSIAN	Molecular Modelling	8 17:18:43.50	44.6
2. User programs	Compiled Programs	3 09:08:57.90	17.3
3. DKDFG	Disk Optimizer	2 23:48:46.03	15.3
4. NEWS	ANU News Utility	1 04:50:49.89	6.1
5. MAIL_SERVER	VMS Mail Server	0 09:47:51.74	2.1
6. BACKUP	Disk Backups	0 08:29:33.60	1.8
7. MAIL	VMS Mail Utility	0 08:25:27.30	1.8
8. LOGINOUT	User Login	0 07:32:57.46	1.6
9. IRC	Internet Relay Chat	0 05:03:05.30	1.1
10. BN_GATEWAY	BITNET Mail Gateway	0 04:21:02.98	0.9
Total		19 13:45:15.59	

SOLBOURNE USAGE STATISTICS

September Top Ten Programs: CPU Time Used

Program	Description	CPU Minutes	Percent of Total
1. UserPgm	User Programs	39250.3	41.2
2. g90	Gaussian 90	34754.9	36.5
3. sas	Statistical Package	14882.0	15.6
4. find	File Locator Utility	846.9	0.9
5. gopher	Gopher Information Service	823.5	0.9
6. update	Filesystem sync	341.3	0.4
7. sendmail	Mail Delivery	119.4	0.1
8. newirc	User Program	108.4	0.1
9. ircd	Internet Relay Chat Daemon	107.1	0.1
10. tssh	User Program	106.1	0.1
Total		93328.7	

VAX/UNIX NEWS

VAX

- **Future Support for VAX Lisp** — DEC is no longer supporting VAX Lisp. Since the VAX is too slow to support serious Lisp usage anyway, we have purchased and installed Allegro Common Lisp on the Solbourne (read Solbourne news for more information). Academic Computing will continue to support VAX Lisp through the end of the fall semester. After the end of the semester, we will leave it on the system, but will not support it. After the end of the Spring 93 semester,

we will remove it from the system. If you have any questions or comments, please send mail to OPERATOR.

- **HYTELNET Upgraded to 6.3** — HYTELNET 6.3 is now available. It contains more information as usual. There are well over a hundred new sites listed.

SOLBOURNE

- **Weekly backup time changed** — Since the weekly stand-alone backups have much more to back up than before and it is taking considerably longer, Saturday morning backups will start at 5a.m. instead of 7a.m. This means that Sol should be available again by around 9a.m. instead of 11a.m.
- **Allegro 4.1** — Allegro Common Lisp 4.1 has been installed on this system. This is a complete implementation of Common Lisp based on the text, "Common Lisp the Language, Edition 2" (CLtL2) and the X3J13 ANSI subcommittee. The complete user guide documentation for Allegro is available in the ISB 110 computer lab.

- **GNU emacs-18.58** — The GNU Emacs editor has been upgraded from version 18.57 to 18.58. Most users will not see any significant difference. Those of you who do not already have a customized ".emacs" initialization file can access a sample available on our system. Upon entering Emacs, if a ".emacs" file is not found in your home directory, you will be prompted with a "welcome message" for new users. At the end of this message, you will be prompted whether you wish to receive this file. If you respond with 'y', this file will be copied into your home directory.

If you already have a ".emacs" file, this will not affect you. Alternatively, you can manually copy this file into your home directory by issuing the command: % cp /home/proto/dot.emacs ~/.emacs.■

MAINFRAME TECHNICAL SERVICES

Mainframe Performance Statistics

September Top Ten MVS Programs : Frequency Of Runs

Program	Description	# of Runs	% of Total
1. IEBGENER	IBM Utility	5746	16.2
2. IEWL	Linkage Editor	5443	15.3
3. PGM=*.DD	Compiled Program	5435	15.3
4. IDCAMS	VSAM	3554	10.0
5. SASLPA	SAS Version 5.18	3524	9.9
6. IGYCRCTL	VS COBOL2 Compiler	3265	9.2
7. SPCHLCOB	COBOL2 Report Writer	1903	5.4
8. SPSS	SPSS Version 4.0	1208	3.4
9. IKJEFT01	Password Change	1059	3.0
10. SAS370	SAS Version 6.06	911	2.6

September Top Ten MVS Programs: CPU Seconds Used

Program	Description	CPU Seconds	% of Total
1. SASLPA	SAS Version 5.18	658869	84.6
2. PGM=*.DD	Compiled Program	35845	4.6
3. SAS370	SAS Version 6.06	28121	3.6
4. SPSS	SPSS Version 4.0	12319	1.6
5. SSS4001	Operations Automation	9804	1.3
6. SPCHLCOB	COBOL2 Report Writer	9635	1.2
7. COMPLETE4	Academic COM-LETE	6970	0.9
8. IGYCRCTL	VS COBOL2 Compiler	4319	0.6
9. IEWL	Linkage Editor	2351	0.3
10. IDCAMS	VSAM Utility	1768	0.6

Operating Systems Performance Statistics for September

		Planned Production Hours	Production Hours Achieved	System Uptime
CPU	SYSTEM			
ACAD	VM/XA	719.46	713.46	99.2%
ACAD	MUSIC/SP	699.08	692.51	99.1%
ACAD	MVS/JES2	719.46	711.92	99.0%
ACAD	COMPLETA	718.84	711.16	98.9%
ADMN	MVS/JES2	674.10	667.76	99.1%
ADMN	COMPLETA	289.00	286.78	99.2%
ADMN	ADABASA	657.82	248.43	98.6%

System Uptime

- The ACAD CPU (HDS/8083) achieved 100% uptime in September. The HDS/7360 DASD achieved 100% uptime in September. The HDS/7380 DASD achieved 100% uptime in September.
- The ADM CPU (IBM 9121/440 processor) achieved 100% uptime in September. The HDS/7360 DASD achieved 100% uptime in September. The HDS/7380 DASD achieved 100% uptime in September. The IBM 3390 DASD achieved 100% uptime in September. The EMC Solid State Disk achieved 100% uptime in September. ■

Key Causes Of Lost Productivity In September: ACAD CPU

MPU, Disk, and Tape Subsystems (HDS)

- Upgrading microcode in 7880 DASD controller. 2.23 HOURS
- Reconfiguring and rerouting channel paths on a 7380 DASD string. 1.42
- TOTAL 3.65 HOURS

Miscellaneous

- VM/XA systems software development. 4.03 HOURS
- Stopping 8083 MPU while disconnecting NCR 3690 communications processor and connecting IBM 3745 communications processor to channel path 0-0. 0.37
- Stopping 8083 MPU while deinstalling MEMOREX 1270 communications processor. 0.17
- GRAND TOTAL 8.22 HOURS

Key Causes Of Lost Productivity In September: ADMN CPU

MPU, Disk, & Communications Processor (IBM)

- Installing microcode patches in 9121 processor. 1.07 HOURS

Disk and Tape Subsystems (HDS)

- Upgrading microcode in 7880 DASD controllers. 1.07 HOURS

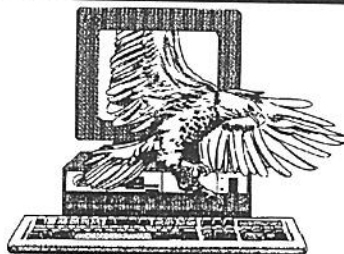
Miscellaneous

- Converting MVS/SP to MVS/ESA OS. 44.08 HOURS
- Systems software development. 4.03
- ADABAS system failure. 1.72
- Disconnecting NCR 3690 communications processor and connecting IBM 3745 communications processor to channel path 0-0. 1.65
- Reconfiguring line addresses for COMPLETE after MVS/ESA conversion. 1.57
- Undetermined causes for systems restarts. 0.93
- Stopping MVS LPAR while deinstalling MEMOREX 1270 communications processor. 0.17
- GRAND TOTAL 56.69 HOURS ■

MAINFRAME TECHNICAL SERVICES

Disk Backup Schedules

SYSTEM	BACKUP	DESCRIPTION
Administrative MVS/SP	Daily	Monday - Friday around 7 p.m. (after COM-PLETE is shut down) & on Saturday & Sunday if COM-PLETE has been up that day.
	Weekly	Full pack dumps taken each Sunday morning.
	Monthly	Full pack dumps taken on the first day of each month.
Academic MVS/SP	Daily	Monday - Sunday during the early hours of the morning.
	Weekly	Full pack dumps taken each Sunday.
	Monthly	Full volume dumps taken on the first day of each month.
MUSIC/SP	Daily	Wednesday - Monday starting at 4 a.m. and lasting about 30 minutes.
	Weekly	Tuesday mornings at 3 a.m., these last about 2 hours.
	Semester	Once a semester, a permanent backup is taken.
VM/XA	VM Weekly	Early every Wednesday morning.
	CMS mini-disks	Daily backup performed early every morning. Weekly backup every Tuesday starting after Midnight.
	Semester	Once a semester, a permanent backup is taken.
VAXcluster	Daily	Incremental backups are performed Monday - Thursday at 6 p.m. Saturday & Sunday at 5 p.m.
	Weekly	Full backups are performed every Friday beginning at 8 a.m. Generally lasts all day.
	Monthly	A "stand-alone" backup is performed monthly. Dates and times are given in the system log-on message.
	Semester	Once a semester, a permanent backup is taken.
Solbourne	Daily	Incremental backups are performed Sunday - Friday at 2 a.m.
	Weekly	Full backups are performed every Saturday at 5 a.m.
	Semester	Once a semester, a permanent backup is taken.



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